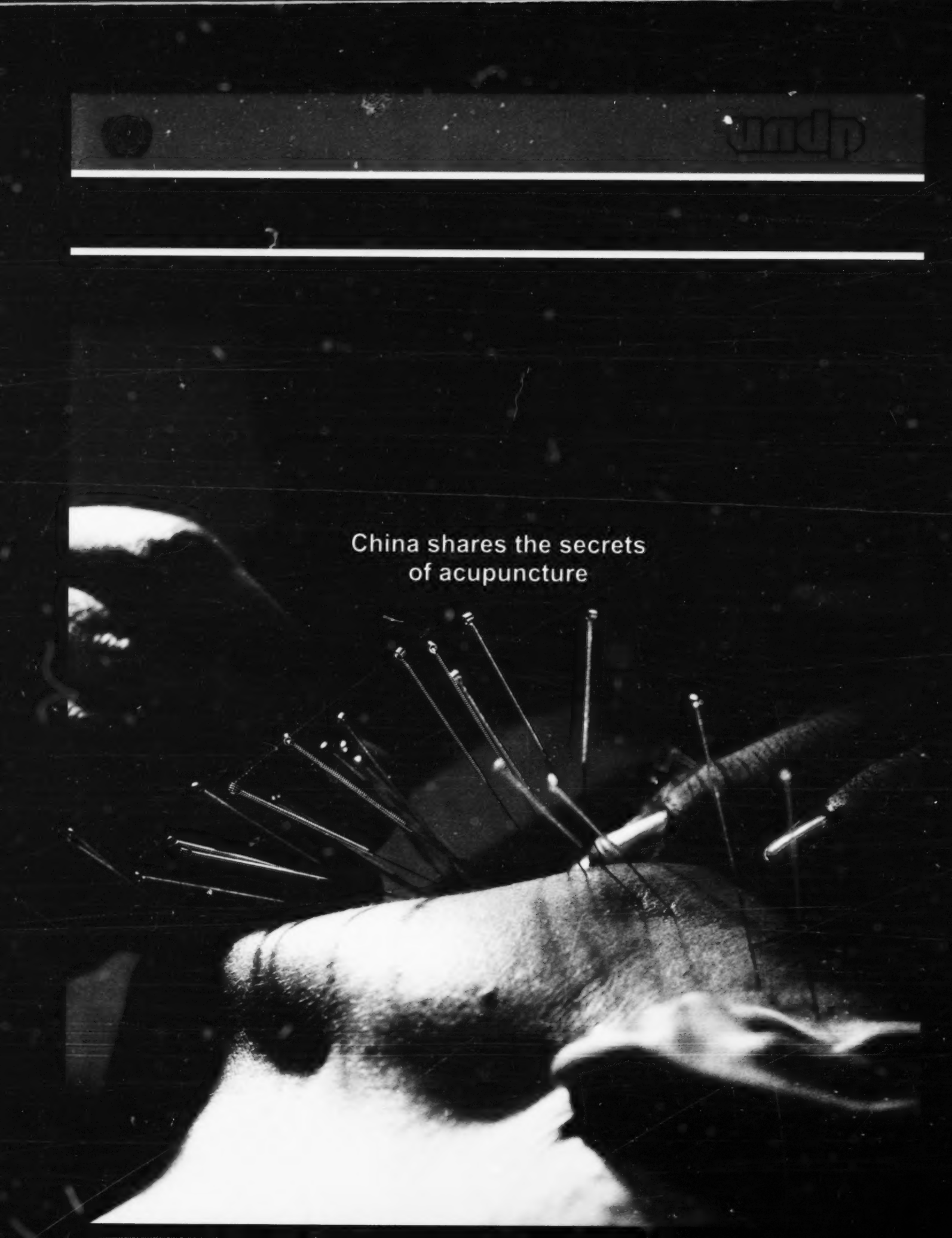
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The TCDC emblem on our cover displays a symbolic bridge joining the countries and people of the Southern hemispheres. The centre of the emblem—where the Southern, Northern, Eastern and Western parts of the world all join—symbolizes a further and ultimate objective of TCDC: the enhancement of truly global partnership for development.

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An acupuncturist treating a patient. See "Acupuncture: Turkey Gets the Point," page 3, and "Sharing an Ancient Science," page 5.

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World Development

Acupuncture: Turkey Gets the Point

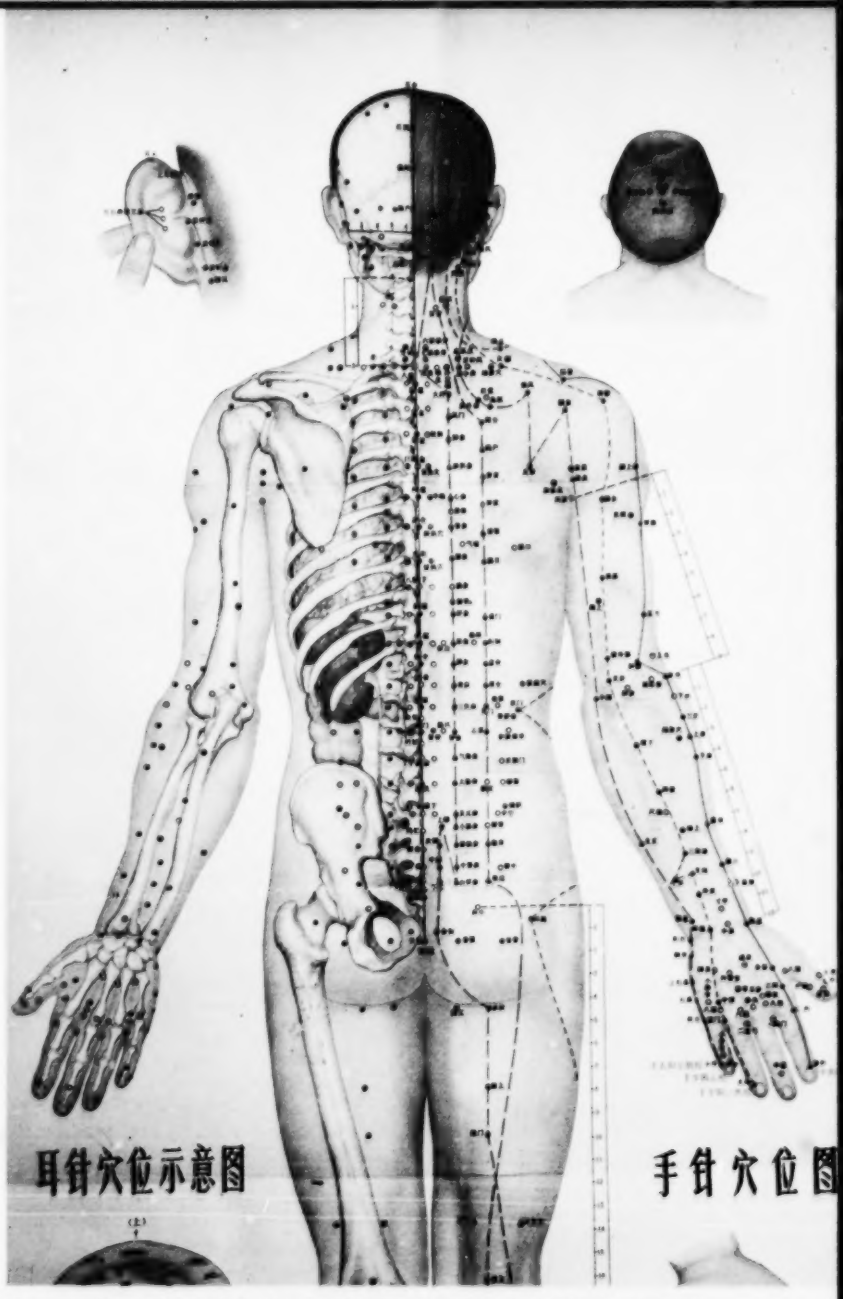
Three years ago a group of Turkish doctors began learning acupuncture from Chinese experts under a TCDC exchange. Christopher McIntosh writes about the use of the technique in Turkey

Ankara, Turkey — When Billur Kaleli, a 33-year-old dentist in Ankara, developed severe dermatitis on her hands and feet, the sores were so painful that she found herself unable to work. After three years of unsuccessful treatment by various specialists, she turned to Dr. Nihal Kadiogullari, an anaesthesiologist at the Ankara Oncology Hospital, who is also an acupuncturist.

"After I had given her 10 acupuncture sessions, the sores on her hands disappeared," Dr. Nihal says, "and she was able to resume work. The treatment for her feet is still continuing, but the condition is rapidly improving, and I am optimistic that further acupuncture sessions will bring about a complete cure."

Dr. Nihal is one of a number of Turkish doctors trained by Chinese acupuncturists under an agreement concluded at a 1987 TCDC programming exercise in Ankara. The meeting brought together over 20 developing countries to discuss TCDC exchanges with Turkey. It was organized by the Government of Turkey in collaboration with the Special Unit for TCDC of the United Nations Development Programme (UNDP).

Following the exercise, two doctors from Turkey's Ministry of Health went to China for three months to receive training at the Acupuncture Institute of the Academy of Traditional Chinese Medi-



Acupuncture chart of the human body, showing the points at which needles can be inserted during treatment.

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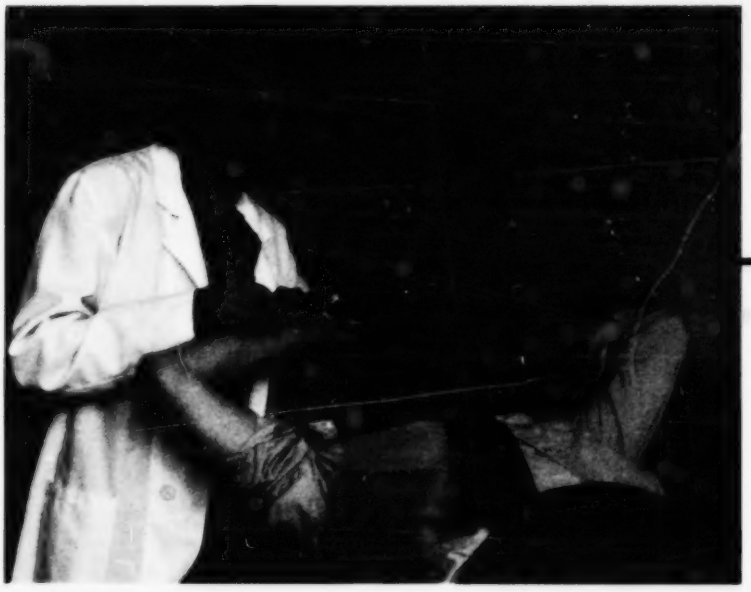


A patient being given acupuncture treatment by Doctor Nihal Kadioguliari, one of the Turkish physicians trained by Chinese experts.

cine in Beijing. The doctors' air travel was funded by the World Health Organization. Training and living expenses were paid by the Chinese government.

Later, two women acupuncturists from the Chinese Acupuncture Institute, Professor Peng Yue and Dr. Yuan Shih Chuen, were sent to Turkey to conduct a three-month training course. They were accompanied by an interpreter who translated the lectures into English. Air fares for the three Chinese were paid by UNDP's Special Unit for TCDC. The Turkish government paid their living expenses.

The course, held at Ankara State Hospital, was attended by 11 Turkish doctors, including Dr. Nihal. Participants received theoretical teaching in the mornings and practised on patients in the afternoons. The Chinese brought with them acupuncture needles and other equipment, as well as training documents and models of the male and female body. The figures were covered with numerous dots showing the acupuncture points and connected by lines representing the "meridians," or channels of vital energy.

The Chinese acupuncturists believe that there are two kinds of energy flowing through the body: a "yang" or masculine kind, and a "yin" or feminine kind. Illness, they say, is caused by an imbalance between the two. The insertion of needles at certain critical points, depending on the affliction, is believed to restore the correct balance between the two forces.

"All this was very unfamiliar to me," recalls Dr. Nihal. "At first I wondered whether the system could really help people. But I was immediately convinced when we started to apply it and I saw the results."

Patients with complaints ranging from arthritis to persistent headaches, none of which had responded to other forms of treatment, were referred by their specialists to the course participants. All patients were eager to try acupuncture.

"In many cases, the improvements were dramatic," Dr. Nihal says. "I treated patients who had been walking with difficulty because of arthritis. After the treatment I noticed that they were walking much more easily."

Although acupuncture is not totally new to Turkey, it does not yet enjoy full legal status. While private doctors can practise it freely, its use in the state medical system is severely restricted. To change this situation, a number of the Chinese-trained doctors formed a committee to draw up appropriate laws. One of the members is Dr. Gulay Isik of the Ministry of Health in Ankara.

"In consultation with the 22 medical faculties in Turkey, we drew up legislation on acupuncture," Dr. Gulay explains. "This has now been approved by the prime minister's office and will shortly become effective. It will establish a Higher Acupuncture Committee within the Ministry of Health, which will regulate the practice and issue certificates to practitioners. Eventually an academy of acupuncture may be established in Turkey."

Once acupuncture is established on a firm legal foundation, its use is expected to increase. Dr. Nihal, for example, hopes to use it in a pain clinic at her hospital. While some doctors are still sceptical about the system, those who have studied it feel that it can be a valuable complement to conventional western medicine, providing relief for a wide range of ailments without the side effects often caused by drugs. ■

Sharing an Ancient Science

The Chinese, who have been practising acupuncture for over 4,000 years, are eager to pass on their knowledge of this ancient science to other nations, as Gong Tingrong reports

In acupuncture treatment, needles are inserted at critical points to restore the balance of energies in the body.

Because it requires simple, inexpensive equipment and a relatively short training period, acupuncture is highly suitable for use in developing countries, especially for people in remote areas," says Dr. Jin Xi, in charge of international courses at the Acupuncture Institute in Beijing.

The Institute was established in 1951 and began to train foreign doctors in 1975. Since then it has organized more than 70 international training courses, involving over 1,500 participants, most of them from the developing world.

The courses last up to three months. Participants learn the basic theories of traditional Chinese medicine and memorize the locations of up to 250 acupuncture points. In addition, they spend more than half their time treating patients. Many of them set up their own acupuncture clinics when they return to their countries.

Besides running training courses, the Institute has also sent acupuncture experts to Chile, India, Mauritius, Papua New Guinea, the Philippines, Turkey and Yugoslavia. By the end of last year, 25 doctors had trained 387 local acupuncture practitioners.

"In future," says Dr. Jin Xi, "we plan to increase the basic courses to three every year. In addition there will be a more advanced course lasting four months. We will also continue sending our experts abroad and will help in setting up more acupuncture clinics in the developing world." ■

Panama Reaps the Benefits of TCDC

Panama's TCDC unit, established in 1989 under the Ministry of Planning and Economic Policy, has already helped to co-ordinate a wide range of projects. Cherie Hart reports

Panama City, Panama — El Chorillo is Panama City's toughest slum district, a setting for prostitution, drugs and knifings, where young men view a boxing career as their only hope of escape. During the armed intervention of December, 1989, that led to the overthrow of the military government, the district was caught in the attack and counter-attack, and most of it burnt down.

One of the buildings destroyed was the Tribunal Tutelar de Menores, a reformatory for 100 juvenile delinquents and teen-age boys whose only other home was the streets. While 70 El Chorillo residents died in the neighbourhood blaze, all of the boys in the shelter escaped alive.

"They must have walked between the bullets," says Georgina Osorio of Panama's Ministry of Planning and Economic Policy. "Their lives were miraculously saved. Now we're working on getting a roof over their heads and setting up a new rehabilitation programme for them." Ms. Osorio is the Ministry's National Co-ordinator of Technical Co-operation among Developing Countries.

Late last year, with funds provided by UNDP, her office sent a Panamanian psychologist from the Tribunal Tutelar de Menores to Costa Rica to study the country's juvenile reform system. "Costa Rica has well organized and advanced institutions for getting their homeless and delinquent young people back into the mainstream," says Ms. Osorio. "When we find a new location for our own reformatory, we'll be able to apply some of the social techniques developed by the Costa Ricans."

Such exchanges of expertise and information are not new to Panama In 1973, the government established the Department of International Technical Co-operation (DATI) within the Ministry of Planning. DATI co-ordinates external co-operation in general.

Later, Panama moved a step further by creating a unit specifically for South-South co-operation. This was prompted by the 1988 third biennial meeting of the Group of 77, an alliance of developing countries. At the meeting, participants held discussions with UNDP's Special Unit for TCDC about ways to build self-reliance through mutual low-cost exchanges of technology and know-how.

By the end of 1989, Panama's TCDC office was set up within DATI. UNDP contributed US$100,000 to help launch the programme and establish a range of TCDC activities with other countries. This was used primarily to pay air fares of Panamanian experts travelling abroad on TCDC missions. The Panamanian government provided $92,000.

While each exchange of experts has been short—from two weeks to one month—all have been productive. "The TCDC programme is the purest form of co-operation," says Ms. Osorio, "because a small amount of money results in big gains and good advice."

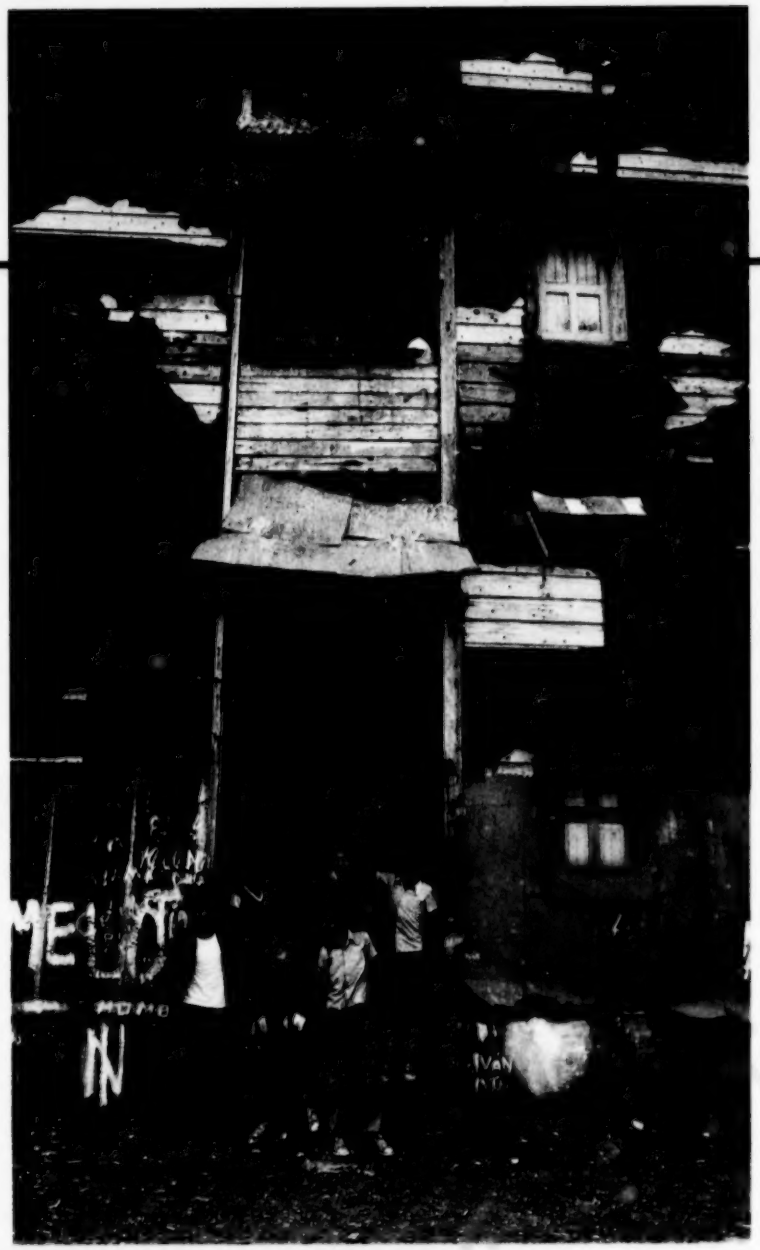
Since it began a year and a half ago, the programme has flourished. Fields covered include agriculture, aquaculture, small business development, cultural affairs and medicine. Generally, Panama has used TCDC to meet its own needs. With the exception of aquaculture, Panama has not yet had the chance to offer its expertise to others. Panama is anxious to break this barrier and expand its TCDC programme. "As a free trade zone," says Ms. Osorio, "Panama has great experience in trade and banking which could benefit other countries of the region. We want our neighbours to know that we need not ask for assistance all of the time. We can provide it too."

The benefits to Panama have made their mark all over the country. A Colombian architect drew up blueprints to accurately restore the Church of Natá, one of the oldest in Panama. Under another TCDC exchange, a Uruguayan fisheries expert brought edible frogs to Panama and taught a short course on how to raise them in captivity. Considered a delicacy in Uruguay, the frogs have already begun to reproduce in Panama, and it is hoped to start exporting them.

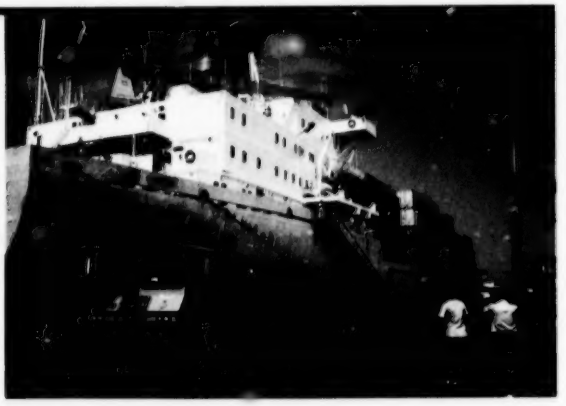
More than a year and a half after the military conflict in Panama, the country is building its economy, its infrastructure and its new democratic government. Its programme of TCDC is also growing. As Panama taps the expertise of its neighbours, the country has taken steps to promote its own technical competence. A new catalogue of Panamanian needs and capacities has been published and is now under distribution. The hope is that soon Panama will be giving as much as it receives in technical co-operation.

Copies of Panama's catalogue of needs and capacities can be obtained free of charge from:

Department of International Technical Co-operation
Ministry of Planning and Economic Policy
P.O. Box 2694
Panama City 3, Panama.

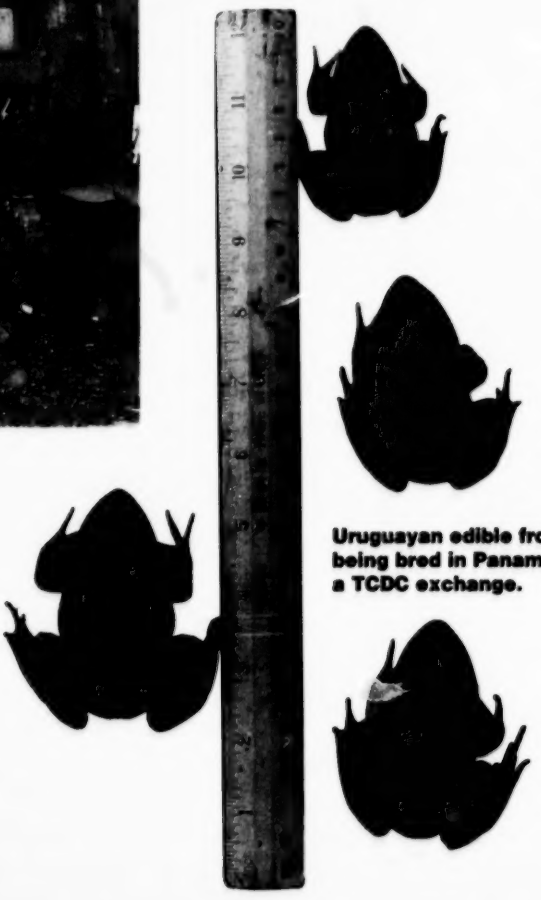


To reform delinquent young people from its poor urban areas, Panama is using techniques developed by social workers in Costa Rica.



With its canal and free trade zone, Panama has valuable experience in international commerce which it is eager to offer to other developing countries.

Georgina Osorio, Panama's national co-ordinator of TCDC.



Uruguayan edible frogs are now being bred in Panama as a result of a TCDC exchange.

Panama's Aquatic Harvest

Cherie Hart writes about Panama's impressive achievements in the field of aquaculture, which it is sharing with other developing countries

Panama City, Panama — Every day at Panama's six aquaculture research and reproduction centres, nature is cajoled by science to produce remarkable changes. Beneath the surface of man-made lakes and ponds at these sites, exotic fish are being induced to reproduce in captivity, and hormonal concoctions mixed with fish food are altering the sex of tilapia.

With more than 550 rivers and access to both the Atlantic and Pacific Oceans, Panama has distinct advantages for aquaculture development. Nature has also graciously provided the country's Pacific coast with 15,000 hectares of salt flats, perfectly suited for shrimp cultivation.

These resources continue to be put to good use by Panama's National Directorate of Aquaculture (DINAAC), under the Ministry of Agriculture and Livestock Development. "We are now quite well known in Latin America," says Hugo Pérez, National Director of DINAAC. "Our specialty is reproduction of freshwater species."

The country's first freshwater experimental station was built in 1976 in Divisa, 250 kilometres west of Panama City. Divisa's 50 earthen and 20 concrete ponds, covering six hectares, are used to perfect fish reproduction technology. Another station, built 450 kilometres from Panama City in Gualca, directs research toward the development of commercial freshwater fish cultivation. Over the years, four more research centres have been launched: a brackish water experimental station for studying fish nutrition and screening local marine species for culture potential, a freshwater shrimp larvae laboratory, a marine shrimp larvae laboratory and a post-larvae station.

"At first, these centres were geared toward providing a source of inexpensive protein to subsistence farming families," says Mr. Pérez. "The aim was to reduce domestic demand for red meat by teaching local communities how to produce aquatic organisms in fresh, brackish and salt waters."

Today, the work at the centres has become more sophisticated, even though the goal of producing low-cost food for human consumption remains the same. Eight times a day at the Divisa station, for example, lab technicians and biologists feed tilapia fingerlings a dried mixture of food and testosterone. After 28 days, the end result is an all-male batch of fish. These are then sold to local farmers to grow in ponds and lakes. The advantage is that males grow faster than females.

Chinese carp and the colossoma, an Amazon River fish from Brazil which can grow as large as 18 kilogrammes, are also reproduced at Divisa. A safe hormone is injected into the females to induce the release of eggs. These are then mixed with sperm and placed in an incubator. In 10

Left: **The colossoma, an Amazon river fish weighing up to 18 kilogrammes, is one of the species being reproduced in Panama.**

Above: **Hormones are injected into a female colossoma to induce a release of eggs for fertilization.**

Right: **Shrimp produced at a brackish water experimental station.**

to 12 hours, young fish are hatched and then placed in ponds to grow to maturity. Without this method, these fish would never reproduce on their own in closed waters.

As Panama's aquaculture research advanced, the need to share information and expertise became essential. Alone, Panama did not have the research and experimentation facilities to cover all of the specialities within a science that touches on a wide range of disciplines, including fish species biology, ecology, animal physiology, pathology, feed technology, aquatic chemistry, agricultural economics and rural sociology. To expand its aquaculture information and technology base, Panama began to send its biologists, agronomists and fisheries experts overseas for training and post-graduate studies.

Since 1979, under the auspices of DINAAC, more than 50 Panamanian fisheries experts have gone on training and consultation missions to over a dozen Latin American countries as well as to Belgium, China, Israel, Japan, the Philippines, South Korea and the United States. Funding for these exchanges has come from host governments, the Panamanian government, the Food and Agriculture Organization of the United Nations (FAO), the United States Agency for International Development, the World Bank, and the Aquaculture

Netting adult carp for experiments in artificial reproduction.

Panama's director of aquaculture research, Hugo Pérez *(left)*, examines fish produced in capacity.

and Fisheries Programme of the Latin American Economic System (SELA).

In exchange, Panama has received more than 150 fisheries experts over the past five years, representing nearly every Latin American country. Under various bilateral agreements, these professionals have come to study shrimp farming, species management, nutrition, fish reproduction and other fields covered at the six research centres. In nearly all cases, Panama houses the experts during their training courses, which range from four days to six months.

While Panama continued to improve its aquaculture technology and information through overseas contacts, additional assistance came in 1989. Mexico hosted the first programming exercise in aquaculture for Latin America and the Caribbean. The gathering of representatives from 19 countries of the region and more than 30 national institutions was supported by FAO, SELA and the Special Unit for Technical Cooperation among Developing Countries of the United Nations Development Programme (UNDP).

"This meeting pulled everyone together under one roof," says Mr. Pérez. "We had talked before, but always on an *ad hoc* basis. This was like a Persian market where we could see what everyone else needed or what they could provide."

Experts from 13 countries offered their skills in areas such as freshwater fish production, nutrition and shrimp culture. In addition, nearly 50 species of fish and shrimp were made available for transfer.

Since the Mexico City meeting, with administrative and financial support from UNDP and Panama's TCDC office within the Ministry of Planning and Economic Policy, more than a dozen exchanges of experts and fish species have taken place between Panama and other countries of the region. A Uruguayan scientist brought edible frogs to Panama. He demonstrated how this particular species, a delicacy in Uruguay, could be reproduced in closed waters at Panamanian aquaculture centres. In another exchange, Chile gave 3,000 oysters to Panama to investigate their reproduction potential. In most instances, the species were a gift from the government.

As in all TCDC exchanges, to cooperate is not just to receive. No matter how small or how severe its economic difficulties, a country can always contribute something of its experience and knowledge to another country. The key is to make full use of each nation's institutional and technical capabilities. For Panama, TCDC has helped to transform a national aquaculture research programme into a vital regional asset. ■

INRES-South: What's In It For Whom?

By Edward C. White

Requests for information are arriving at INRES-South headquarters in ever-increasing numbers. During the first four months of this year 500 were received, twice the number for the same period last year. This augurs well for the rest of 1991.

With so many requests coming in, we decided that it would be interesting to break them down by region of origin, type of information sought and who is seeking it. Our analysis was based on the 744 applications received in 1990. At the same time, we took a fresh look at the data contained in INRES-South to see what sectors are emphasized.

Regionally, Africa accounted for the largest number of inquiries, followed closely by North America and Europe together, then by Latin America and the Caribbean, Asia and the Pacific, and the Arab States, in that order.

The relatively large number of applications from sub-Saharan Africa, which contains the biggest concentration of least developed countries, reflects the African nations' continuing demand for technical assistance and their eagerness to explore TCDC channels.

The large number of inquiries from North America and Europe is explained by the fact that INRES-South is used not just by developing country institutions but also by United Nations agencies and bilateral aid programmes. The biggest user is the United Nations Development Programme (UNDP) itself, including the Special Unit for TCDC. Government institutions all over the world form the second largest group of users, followed by private institutions, individual inquirers and United Nations agencies other than UNDP.

Most users sought information on both training and expertise capacities. Where inquiries specified either training or experts, it is interesting to compare the different groups. Individuals and governments submitted more requests for training than for experts. In the case of UNDP, it was the other way round.

Particularly striking is the small number of inquiries coming from UN agencies other than UNDP. However, this situation is expected to change now that the United Nations Industrial Development Organization and the Food and Agriculture Organization both have the INRES-South software and can access the system directly. The software also includes a facility for providing statistics on the use of the system.

What resources does INRES-South offer to its users? By the beginning of this year there were 4,100 institutions registered in the data base. Asia and the Pacific have the largest share, with over 1,400 institutions. Second comes Latin America and the Caribbean, with more than 1,000, followed by the Arab States, with 701. Fourth on the list is Africa, with 488. In fifth place are the developing countries of Europe, with 376.

The data base contains a total of 25,100 capacities, that is training programmes and areas of expertise offered by these institutions. The largest sector, by an appreciable margin, is industry, with a total of 9,754 coded capacities. The next biggest sector, science and technology, has 5,800 capacities listed. These two sectors between them account for 38 per cent of capacities. Close behind is agriculture, with 5,177 capacities, followed by transport and communications, with 3,071. The remainder, with between 2,000 and 3,000 capacities each, are health, education, culture, and economic development and finance.

It is also interesting to break down the two main sectors and see how many institutions are in each sub-sector. The results are shown in the two tables below.

This overview of the contents of INRES-South provides some indication of the scope of information on institutional capacities of developing countries. The profile will change, however, as new institutions are added to the data base. ■

Industry sector	
Manufacturing and mining	2,459
Management	1,824
Electronics and power	1,468
Construction and engineering	1,030
Industrial development support services	772
Food	768
Chemicals and pharmaceuticals	404
General industrial sub-sector	392
Tourism and related services	281
Waste disposal	133
Insurance	55
Industrial property	7

Science and technology sector	
Hydrology and oceanography	3,988
Computer science and technology	1,049
Life sciences	1,022
Earth sciences	791
Astronomy, chemistry and physics	756
Mathematics	631
Development and technology transfer	505
Nuclear science	345
Meteorology	247
Space sciences	22

Building Bridges across the Caribbean

Recently, Jamaica hosted a workshop to stimulate Caribbean countries to solve their development problems in a spirit of mutual self-help. The event is described here by Samuel Oglesby, who took part as the Senior Training Officer of the Special Unit for TCDC of the United Nations Development Programme (UNDP)

Errol A. Lewin, Director of the Technical Co-operation Division, Planning Institute of Jamaica, who organized the conference on behalf of the Government of Jamaica.

Kingston, Jamaica — Disaster preparedness, structural adjustment, and protection of the environment were the focus of a three-day workshop for the promotion of TCDC held in Kingston, Jamaica, in late March. The meeting of 14 Caribbean countries was marked by a strong desire to solve the region's problems by drawing first on the Caribbean's own experience and talent.

This theme was articulated with force and eloquence by the keynote speaker, G. Arthur Brown, Governor of the Bank of Jamaica and former Associate Administrator of UNDP. He said that the bulk of development efforts should come from the people of the country. Only where national capacities were insufficient, should help be sought from neighbouring countries of the region, in this case the Caribbean. And only after Caribbean capabilities had been fully explored should countries look to the "outside" for additional assistance. Mr. Brown noted that, while TCDC is certainly alive in the Caribbean, it is operating at too low a level. TCDC should become an accepted norm instead of an exception or a special opportunity. He urged the workshop's participants not just to talk about TCDC, but to use it.

The participants represented a wide cross-section of Caribbean development professionals. They came from governments, professional institutions, universities and regional organizations including the Caribbean Community (CARICOM) and the Economic Commission for Latin America and the Caribbean. UNDP was represented by staff members from its five offices in the Caribbean and from the Special Unit for TCDC in New York. The organizer of the conference, on behalf of the Jamai-

can government, was Errol A. Lewin, Director of the Technical Co-operation Division, Planning Institute of Jamaica.

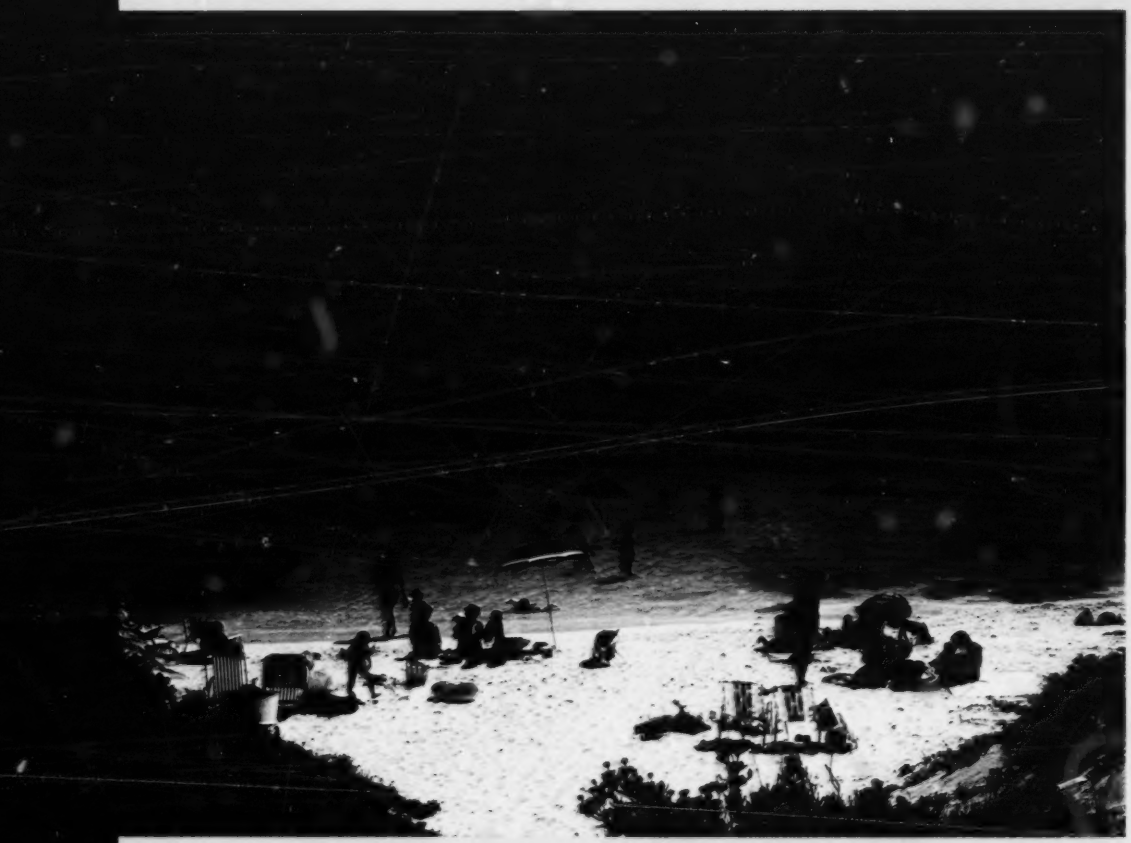
On the first day, presentations were given by three staff members of the Special Unit for TCDC. Samuel Oglesby gave an overview of TCDC concepts and approaches. Graciela Vasquez-Diaz, Senior Regional Officer for Latin America and the Caribbean, summarized the Latin American TCDC experience. Edward White, Principal Information Officer, gave an orientation on the INRES-South system, a data base on developing country institutions that can provide training, technical expertise and other forms of development assistance.

In keeping with the practical aim of the workshop, the remaining time was devoted mainly to examining three case studies. The first, on structural adjustment, was presented by Sandra Henry of the Planning Institute of Jamaica (PIOJ). Discussions centred around lessons learned from the Jamaican experience. These included the impact of structural adjustment on key sectors such as tourism, the social consequences of adjustment and new ways to cope with its negative effects, such as reduction in real wages.

To help the Caribbean countries benefit from each other's experience in this field, the workshop recommended that a handbook on the Caribbean structural adjustment experience be prepared by the PIOJ in co-operation with other Caribbean countries. Another recommendation was that CARICOM

Disaster preparedness

Workshop participants discussed how to prepare for disasters such as the flooding and devastation caused in the Caribbean in 1989 by hurricane Hugo.



Structural adjustment

The workshop studied the impact of structural adjustment programmes on industries such as tourism, an important sector in the Caribbean.

convene a workshop in 1992, which would examine the Caribbean-wide experience with structural adjustment programmes. Finally, it was suggested that a detailed analysis of the impact of structural adjustment on key sectors such as tourism and agriculture be prepared by the PIOJ.

The second case study, on disaster preparedness, was presented by Jeremy Collymore, a lecturer at the University of the West Indies in Mona, Jamaica. Formal technical co-operation among the Caribbean countries in disaster preparedness has existed since 1981 when the region's governments became concerned about economic dislocation resulting from natural calamities. This led to the establishment of the Pan Caribbean Disaster Preparedness and Prevention Project, to help coordinate disaster management strategies at national and regional levels.

The TCDC element has been predominant in disaster preparedness and management, since there is a lack of appropriate models or expertise outside the region to guide the programme. It has taken the form of technical support in institutional strengthening, short-term staff exchanges, as well as documenting and sharing experiences.

Those taking part in the workshop felt that opportunities existed for more TCDC-based work in disaster preparedness, and made a number of specific recommendations. There should be further development of an educational exchange programme which teaches architecture and design students how buildings can be made more hurricane-resistant. Participants also urged the preparation of a regional disaster relief management plan, as part of the work of the Caribbean Disaster Relief Agency. National emergency management agencies were encouraged to write their own disaster relief plans as part of the regional plan. Another recommendation was for colleges to include more courses relating to disaster management. Responsibility for implementing these actions would be assumed jointly by CARICOM, the University of the West Indies, and the TCDC national focal points.

The third case study, dealing with the environment, was presented by Dr. Naresh Singh, Director, Caribbean Environmental Health Institute (CEHI). The workshop focused on the region's most environmentally sensitive sectors—agriculture, industry and tourism. It was agreed that the Caribbean needs to give priority to sustainable, ecologically sound agriculture, eco-tourism, and technologies that produce little waste.

It was pointed out that organizations such as the CEHI and the Consultative Forum on the Management of the Environment were in place for the implementation of TCDC-based activities. The workshop recommended the development of a regional project using existing capacities to tackle the problems that had been identified. CEHI would take the lead in consultation with the Caribbean countries and UNDP field offices.

In addition to the recommendations arising from the case studies, it was proposed that the INRES-South data base should be acquired by a Caribbean country or institution. Participants also urged that national TCDC focal points be strengthened and that governments should work more closely with the private sector and with non-governmental organizations. In addition, a call was made for a meeting next year of Caribbean countries to discuss TCDC projects in specific sectors.

As the third in a continuing series of UNDP-financed promotional workshops on TCDC, the Jamaica meeting is expected to go a long way toward realizing Mr. Brown's goal of raising TCDC to the level of an accepted norm in Caribbean development. Maxine Harris, Senior Technical Officer for CARICOM saw the workshop as "the beginning of a more co-ordinated series of programmes with regional institutions and with UNDP for the benefit of the Caribbean." ■

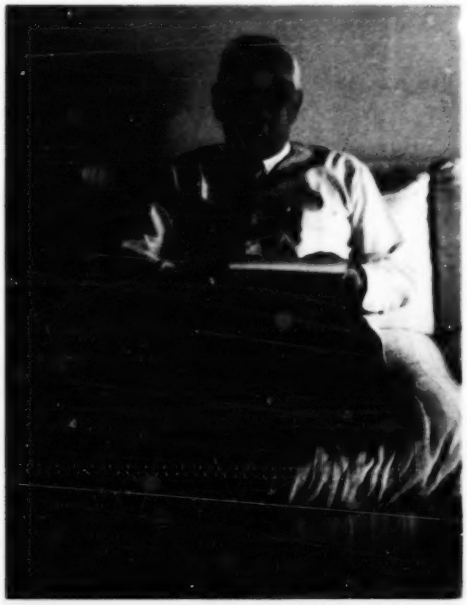
Environment

In a case study on environmental protection, participants discussed how Caribbean farmers can be encouraged to adopt ecologically sound methods, whether they are raising livestock or growing crops.

Training in Sugar Production: A Mauritian Contribution to TCDC

Emma Robson reports on a training centre for the sugar industry, which draws participants from many parts of the developing world

Réduit, Mauritius — Bereft of mineral resources and whiplashed by tropical cyclones, this tiny Indian Ocean island has based its growth on sugar, one of the few crops that flourish in its volcanic soil. In the 300 years since Dutch colonists sowed the first seeds, the industry has grown to cover 45 per cent of the island's surface. Nestling among the plantations is the Regional Sugar Cane Training Centre for Africa.



Above: **Robert Antoine, director of the Regional Sugar Cane Training Centre for Africa, located in Mauritius.**

Right: **Kenyan maintenance engineer David Cheruiyot, in Mauritius for a course in sugar processing.**

The Centre was founded in 1980 under the umbrella of the Mauritian Sugar Industry Research Institute (MSIRI). It was set up as a TCDC operation under an African regional project of the United Nations Development Programme (UNDP), in collaboration with the Government of Mauritius. The Centre was conceived in response to the rapid growth of sugar production and consumption in Africa. Between 1974 and 1980, the number of sugar-producing countries in Africa grew from 26 to 33. Most countries, however, used highly inefficient methods. Crops were thin and low in sugar content, and the extraction process was wasteful. Consequently there was an urgent need to train African sugar producers in more efficient production techniques if the region was to satisfy its domestic demand and be able to compete on the world market.

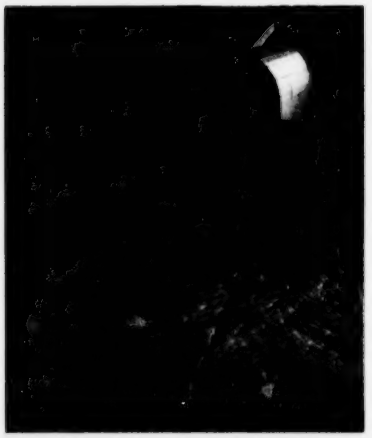
The island of Mauritius, with its long experience in sugar production and proximity to continental Africa, offered the ideal location for a training institute, using Mauritian expertise. The MSIRI, which is a private-sector body financed by a levy on sugar production, provided a building and teaching staff. UNDP contributed US$1.1 million during the first 10 years of the Centre's existence, to cover equipment and operating costs.

Although originally intended to serve Africa, the Centre has reached out to other parts of the developing world. Since 1980, it has trained 458 students, of whom approximately 75 per cent came from sub-Saharan Africa, 15 per cent from the Arab region and 10 per cent from Asia and the Pacific. One student came from neighbouring Réunion, and one from as far away as the Caribbean island of Haiti. "The Centre is the only non-profit organization in the world providing training in sugar production," says Robert Antoine, the Centre's director.

Intensive courses are offered in sugarcane agronomy and sugar processing. In 1992, the Centre plans to launch a course in maintenance of plant and equipment, an important topic for many developing countries, where production facilities are often idle due to insufficient upkeep. Each course lasts three months, which is considered the maximum amount of time sugar companies can spare

Monitors check the quality of raw crystallized sugar at a Mauritian factory.

Liquid sugar pouring into a vat after extraction and before crystallization.



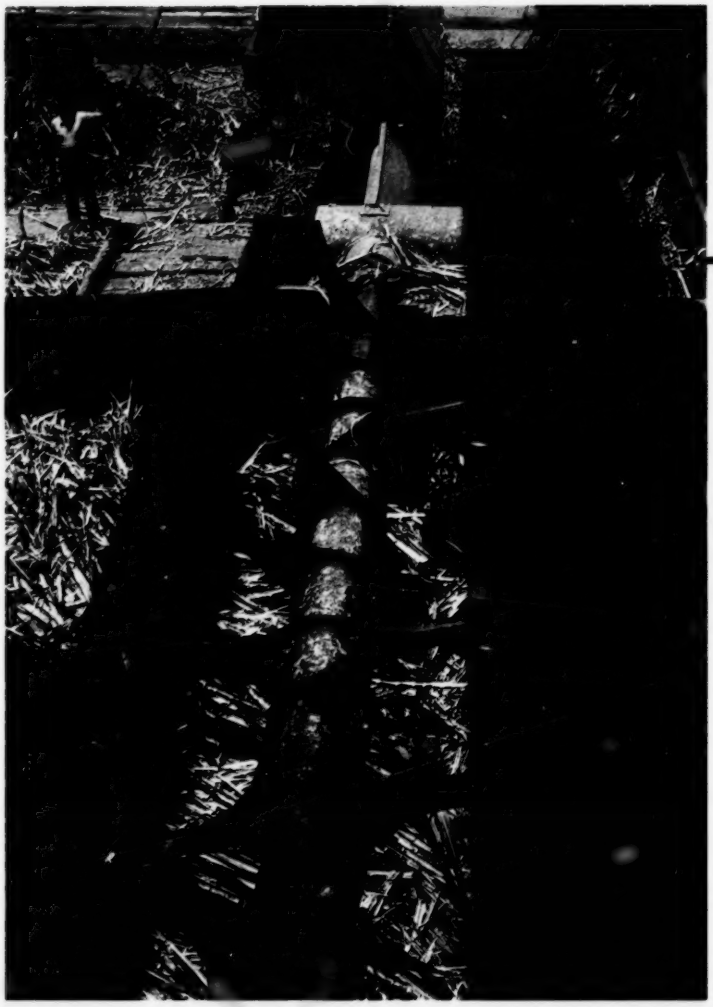
their staff. Teaching costs $2,500 and board and lodging $2,600. These costs are usually paid for either by the student's government or employer, by sugarcane projects in the student's country, or by organizations offering study grants, such as UNDP, the United Nations Industrial Development Organization, the Food and Agriculture Organization of the United Nations, the British Council or the Commonwealth Foundation. "As long as applications are planned well in advance, grants can usually be obtained," says Mr. Antoine.

Mauritius has the advantage of being a bilingual country, and classroom courses are conducted in French or English. Students are also taken on regular visits to the island's 19 major sugar estates. The island's small size — it takes less than 90 minutes to drive from north to south — makes field visits easy. "I can be lecturing in class," says Mr. Antoine, "and five minutes later students can be in the field. We've got two factories almost in our backyard."

Kenyan maintenance engineer David Cheruiyot was sent to attend a recent course in sugar processing by the government-owned Mumias Sugar company, Kenya's largest producer. He said the course provided him with a chance to acquaint himself with technical processes which he had barely touched on in his six years of learning on-the-job back home. "I knew very little about evaporation, clarification, crystallization and steam creation," he says. "Now, everything has fallen into place."

On a visit to one of Mauritius' larger factories, he picked up a small tip that he believes will make a big difference when he puts it into practice in Kenya. "We have a big problem with our cane carriers," he says. "The cane keeps slipping off the edges of the conveyor belt, which means someone has to constantly stand by the machine. One factory here welded metal strips to the sides of the carriers which stops the cane from falling off."

For agronomists Wilfred Pemba and Oscar Soko, who are middle-level managers at Smallholder, the



Bagasse, a sugarcane by-product, provides 15 per cent of the fuel supply for Mauritius' national power grid.

Malawian state-owned sugar company, the sugarcane agronomy course they attended filled in many blanks on disease control and fertilizer use. Much of Malawi's sugar crop is lost to a disease called *smut* that domestic producers have so far been unable to control. "Our solution is to remove or burn the diseased plants," says Mr. Soko. "The Mauritian solution is to breed disease-resistant varieties."

The Malawian agronomists believe they now have sufficient knowledge to be able to start growing new varieties from seed, planting them in separate plots and monitoring them carefully for disease. "The first thing I'll do when I get back is set up a nursery," says Mr. Pemba.

The judicious use of fertilizers, meticulous weeding and constant application of research carried out by the MSIRI have enabled the island's large growers to produce an average of nearly 100 tonnes of cane per hectare, making Mauritius one of the world's most efficient producers. MSIRI breeds many new varieties of sugar every year. All of these are carefully tested, and only two or three are ultimately selected for cultivation.

By applying similar discipline on the factory floor, Mauritian sugar producers achieve impressive yields of dry sugar per tonne of cane. "It's essential to have a good chemist," says Mr. Antoine. "He measures the sugar balance of the factory products and advises the engineer on what adjustments are needed." According to Mr. Antoine, such control is either inadequate or badly understood in some developing country factories, thus leading to unnecessary losses of sugar. "Some factories lose incredible amounts of sugar," he says.

While lacking the diversification experience of the world's largest sugar producer, Cuba, which makes newspaper, hardboard, and even furniture from bagasse, Mauritius has considerable experience in recycling, too. "Our whole factory runs off steam generated by the burning of bagasse," says Freddy Lamport, factory manager at Mon Désert Alma sugarcane estate and part-time teacher at the Sugar Cane Training Centre. Three Mauritian estates supply the fuel needed to generate 15 per cent of the country's electricity. The government has introduced tax breaks on capital investments designed to get producers eventually to supply half the island's energy requirements.

Mauritius' successful diversification away from sugar perhaps also holds lessons for other developing countries that are overly dependent on one crop. Until 1985, the sugar industry was the island's biggest employer and largest single source of foreign exchange. Since then, developments in manufacturing enterprises have been such that the garment and textile industries have overtaken sugar as a source of employment and revenue.

Sugar producers have also proved resourceful in developing additional sources of income. Cultivation of high-value anthurium flowers for export is becoming an important sideline for them. In addition, they have learned to grow food crops, such as potatoes and tomatoes, in the spaces between the rows of sugarcane. This is helping to slash the country's food import bill. ■

Shaping a TCDC Strategy for the Nineties

Zhang Guanghui of the People's Republic of China *(left)* and Abdul Elsheikh of the United Arab Emirates at the High-Level meeting.

Left to right: **Zhao Chengjun from the People's Republic of China, Meral Orgun from Turkey and Ana Maria Corvalan Montenegro from Chile.**

The High-Level Committee on the Review of Technical Co-operation among Developing Countries (TCDC) recently held its seventh biennial meeting. Christopher McIntosh reports on the proceedings

United Nations, New York — The grand vision of an economically self-reliant South, sustained by mutual co-operation, was evident in the many speeches and statements heard during the seventh session of the High-Level Committee on the Review of TCDC. Equally evident was the determination to continue to translate the vision into practical steps and to tackle the many obstacles that still hinder TCDC.

The session was attended by delegates from over 70 countries, along with representatives from the United Nations and its specialized agencies and regional commissions, as well as other inter-governmental organizations. Various non-governmental organizations were also represented.

At the opening meeting on 28 May, Eduard Kukan, Permanent Representative of the Czech and Slovak Federal Republic, was elected president of the session. In his introductory statement, he said that TCDC was as old as human civilization. In the 1990s the aim was to make it truly universal. He noted that his own country had a long tradition of technical co-operation with other countries, which it intended to continue.

In the first major address of the session, Antoine Blanca, United Nations Director-General for Development and International Economic Co-operation, said that TCDC, as a method of promoting collective development, was not yet fully utilized. "The great tasks confronting developing countries in the 1990s," he said, "are a challenge to all of us. These tasks require the whole United Nations system to implement a global strategy for the promotion and development of TCDC."

The realization of such a strategy, said Mr. Blanca, would fall to the United Nations Development Programme (UNDP) as the leading organization for implementing the 1978 Buenos Aires Plan of Action, which launched the TCDC initiative.

Next on the podium, UNDP Administrator William H. Draper III outlined some of the main features that the strategy is expected to include. Efforts would be made to strengthen the capacities of developing countries to implement TCDC projects, scarce resources would be concentrated on a manageable number of sectors, and there would be a greater pooling of resources between UNDP, other United Nations agencies, non-governmental organizations and the private sector.

Since the previous High-Level Committee session, a series of reports had been prepared on progress achieved and difficulties encountered in implementing the Buenos Aires Plan of Action.

UNDP Administrator, William H. Draper III, greets Kong Fannong of the United Nations Department of Technical Co-operation for Development.

These included an assessment of support for TCDC by UN agencies, an examination of the role of women in TCDC and an appraisal of the effectiveness of programming exercises and TCDC activities of governments and intergovernmental organizations.

In the general debate, the opening statement was made by the Chairman of the Group of 77, Kofi Awoonor, Ghana's Permanent Representative to the United Nations. He pointed to the continuing economic difficulties of many developing countries, such as debt service burdens and adverse terms of trade, which drain some of the resources that could be used to promote TCDC. Developed countries and the United Nations system, he said, should do more to support the implementation of the Buenos Aires plan of action. At the same time, he paid tribute to UNDP's Special Unit for TCDC for its "useful catalytic role in providing funding and technical support for TCDC programmes and activities."

Many delegates agreed with Mr. Awoonor's analysis of the global economic situation and its adverse effect on TCDC. The representative of Pakistan, Shaukat Umer, pointed out that, "while the North has grown in power and wealth, the developing countries remain entangled in the struggle for survival." The challenge of the 1990s, he said, is to bring about more equitable interaction between North and South and to establish better channels of co-operation between the developing countries themselves. He pointed to the important role played by regional networks of developing countries, such as the Economic Co-operation Organization between Iran, Pakistan and Turkey, and the South Asia Association for Regional Co-operation.

Anna Liedes of Finland, speaking on behalf of the five Nordic countries — Denmark, Finland, Iceland, Norway and Sweden — agreed that TCDC had potential that had not been fully tapped. She said that the Nordic countries strongly supported the efforts of the multilateral system to further South-South co-operation, and she urged UNDP to give TCDC high priority.

Among the United Nations agency representatives who spoke, was Ramadhar of the Food and Agriculture Organization, who gave an account of his agency's support for TCDC through training programmes, the promotion of technical support networks and the provision of inventories of countries' capacities and needs in agriculture, forestry and fisheries. Other agencies that described their contribution to TCDC included the United Nations Industrial Development Organization, the United Nations Educational, Scientific and Cultural Organization, and the United Nations Population Fund.

Several delegates referred to the world-wide swing to the private sector and its implications for TCDC. William Stibravy, from the International Chamber of Commerce, spoke of his organization's increasing support for private-sector TCDC initiatives. The Yugoslav delegate, Dragan Zupanjevac, also cited the significant role that private enterprise had to play in South-South co-operation.

Many participants spoke of a number of problems hampering the use of TCDC. These included weakness of many national TCDC focal points, inadequate monitoring, lack of data on TCDC activities, the need for better information on countries' capacities and requirements, the difficulties in financing TCDC exchanges, and some lingering attitudinal barriers to TCDC.

While most agreed that developing countries themselves must play the major role in furthering TCDC, many argued that the developed countries and the United Nations system both had a responsibility to provide catalytic and financial support.

In the working sessions, chaired by Ahmed Amaziane of Morocco, delegates drew up 12 decisions which were adopted at the final plenary on 6 June. One of the most important of these was approval of the proposal to draw up a strategy for the promotion and implementation of TCDC by the United Nations development system. The meeting also called for continued support for programming exercises and for strengthening the capacity of UNDP's Special Unit for TCDC. Another decision called on governments and United Nations agencies to make greater efforts to integrate women into TCDC activities. In his closing statement to the meeting, UNDP Associate Administrator Luis María Gómez said the debate had "forcefully reaffirmed the strong support of governments to TCDC and the need to make it a central modality to implement development activities." ■

TCDC and the Role of Women

Participants at the 1990 Cairo conference on Arab Women's Contribution to Development.

The agenda of the recent High-Level Committee on the Review of TCDC included a report on the effort to involve women in South-South co-operation. Lois Jensen discusses how successful this effort has been and examines some of the problems involved

United Nations, New York — The cause of South-South co-operation and that of women in development are natural partners. Women in the developing world share concerns that reach across national and regional boundaries. What could be more sensible than to use this commonality of interest as a basis for TCDC exchanges?

Yet, despite the lip service paid both to women's issues and to TCDC by international organizations, these two themes do not yet complement each other as well as they might.

The report to the High-Level Committee states: "Although there is an increasing awareness among organizations of the need to integrate women in development in TCDC, many have yet to take comprehensive action to identify obstacles to the role of women in TCDC and to adopt specific steps to overcome them."

This is not to say that the women of the developing world have lacked the will to co-operate.

"Women of different nations have been supporting one another and sharing experiences for a long time through various international organizations and networks," says Dunja Pastizzi-Ferencic, a Yugoslavian economist with the United Nations Department of Technical Co-operation for Development. Ms. Pastizzi-Ferencic has been closely involved with international women's groups for the past two decades and was formerly Director of the United Nations International Research and Training Institute for the Advancement of Women (INSTRAW). "The United Nations Decade for Women, from 1975 to 1985, was an important event," she says. "It helped to achieve greater gender-sensitivity in major development efforts by the United Nations and other international bodies."

However, as Ms. Pastizzi-Ferencic points out, in the early stages of the international women's movement there were often profound differences in the goals of the women of the industrialized countries and those of the developing nations. The former, she says, tended to give priority to promoting equality and the empowerment of women. "This may be valid for Europe or North America, but in developing countries you have to look first at survival strategies. You also have to recognize that different cultures have widely differing conceptions of the role of women."

The problem, therefore, is how to bring about development that satisfies the legitimate needs of women, while remaining sensitive to local conditions and cultural norms. TCDC methods offer a way of striking this balance.

Although gender-specific infor-

Women in developing countries can benefit by sharing each other's experience in health care.

Women in the developing world have traditionally played a leading role in water and sanitation.

mation on TCDC projects is hard to obtain, either from international agencies or from TCDC focal points, there are some encouraging instances of South-South co-operation among women.

In Latin America some valuable TCDC exchanges have taken place involving women. Last year, for example, three Panamanians from the National Federation of Business and Professional Women went to Uruguay to learn about a highly successful women's co-operative. Known as the Hands of Uruguay, the enterprise sells crafts, clothes and woven blankets produced by more than 1,000 women artisans in 40 co-operatives throughout Uruguay. The visit was paid for partly out of United Nations Development Programme (UNDP) funds earmarked for TCDC purposes in Panama.

"By observing their unique approach," says Albertina Brugiati, President of Panama's Federation of Business and Professional Women, "we learned what we were doing wrong in our work with low-income Panamanian women. We were trying to create micro-business women like those in our own professional organization. But we forgot to consider that these women lack basic entrepreneurial motivation and education."

The Uruguayan example, on the other hand, encourages women to work together, rather than alone as entrepreneurs. The central headquarters in Montevideo provides the raw materials and handles all of the business finances and marketing. The creative side is left to the artists who work as co-operative groups. "We have begun to show the craftswomen of Panama how to organize themselves similarly," says Mrs. Brugiati.

As part of another exchange, a representative from a non-governmental organization, the Centre for Panamanian Women, recently traveled to Costa Rica to learn how to build low-cost homes from bamboo. The construction techniques will be used in Panama's poorest neighbourhoods.

While such examples are encouraging, there is great scope for expanding the participation of women in TCDC. In water and sanitation, for example, women have traditionally played a leading role, which development projects have often ignored.

"It is not enough just to install a water pump," says Ms. Pastizzi-Ferencic. "You have to involve women in the use and maintenance of it, because in many cultures women are the water carriers. There have already been successful exchanges of experience in

Costa Rica's method of building low-cost bamboo houses, like this one, has been transferred to Panama by a women's organization.

Weaving produced by Hands of Uruguay, a women's co-operative which is sharing its expertise with women in Panama.

An advertisement for clothes made by Hands of Uruguay.

water technology between women of different developing countries. TCDC could play an important role in expanding such exchanges."

Women's TCDC could also be crucial in the prevention of AIDS, as well as other aspects of health promotion, according to Elizabeth Reid, Director of the Division for Women in Development of UNDP. "The crux of any national response to the AIDS crisis has to be community-based organizations," says Ms. Reid. In Zimbabwe, for example, there is a Women's Health Network which brings women together to discuss strategies for safer sex. Their experience could be shared with women in other countries."

While women clearly have an important future in TCDC, they also face special problems. The operation of TCDC often involves the sending of trainees or experts from one country to another. This can be difficult to organize for women with family commitments. The financing of such exchanges can also be a problem, especially when many governments give a low priority to women's concerns. Maintaining data on capacities and needs is also difficult, for women's organizations often lack access to the kind of information technology that is becoming increasingly indispensable to TCDC as a whole.

One of the ways to advance South-South co-operation among women is through the further development of international networks of women and the organizing of events such as last year's UNDP-supported Cairo conference on Arab Women's Contribution to Development. One particularly effective regional women's organization is the General Federation of Arab Women, which is linked to 18 national groups. Its activities range from training women leaders to conducting research on the role of women in the Arab world.

Similar regional and interregional organizations include the Development Alternatives for Women Network (DAWN), currently based in Barbados, the Africa Women's Communications and Development Task Force (FEMNET), in Nairobi, Kenya, and the Asian Women's Network, in Hongkong.

While such organizations are doing valuable work, it is recognized that there is a need for further efforts on the part of governments and international organizations to incorporate women into South-South co-operation. This will also work to the general benefit of developing country economies, in which women play such a crucial role. ■

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